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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/558,939	12/01/2005	Wilhelm Hofmann	3827.144	7234
41288	7590	01/28/2009		
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EXAMINER				
FREAY, CHARLES GRANT				
ART UNIT		PAPER NUMBER		
3746				
MAIL DATE		DELIVERY MODE		
01/28/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/558,939

Applicant(s)

HOFMANN ET AL.

Examiner

Charles G. Freay

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/86)
Paper No(s)/Mail Date 5/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because it is more the 150 words long. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claims 1-8 are objected to because of the following informalities:

In claims 1 and 6, line 6 "control" should be either "controlled" or "driven";

. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The description and claim6 each refer to an "elevating phase", see claim 6 line 26 and page 4 line 9 of the specification. It is unclear what portion of the pump operation is being referred to.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is vague and indefinite because in line 8 it is unclear what "its" refers to and in lines 8 and 10 there is no antecedent basis for "inlet side" or "outlet side".

In claim 1 the phrase "wherein the drive cylinders are...connected with a connector ...via...one hydraulic line" is confusing. The examiner believes the phrase should set forth that *each drive cylinder* is connected to an *opening* of the pump via one hydraulic line.

In claim 1 lines 13 and 14 it is unclear what "on their other end" refers to.

In claim 1 line 15 it is unclear what limitation should be between "a for" the examiner believes either a controller or a computer (see line 29) should be referred to.

In claim 1 there is no antecedent basis for: "the pump-side" in line 17, for "the hydraulically actuated pipe switch" in line 18 or for "the reversible pump...hydraulic circuits" in lines 20 and 21.

In claim 1 lines 26 and 32 the phrase "and/or" is confusing because it sets forth multiple alternative structures and it is unclear which arrangement is being claimed.

In claim 1 there is no antecedent basis for: "the pressure sequence" in line 27 or for "the computer supported reversing device" in line 29.

In claim 1 line 31 it is unclear if "the position provider" is the earlier claimed "position sensor" and in lines 35 and 36 it is unclear if the "reversing element" is the same as the reversing device which was earlier claimed.

In claim 2 there is no antecedent basis for "or encoder" and this limitation should be deleted as redundant.

Claim 6 is vague and indefinite because in line 8 it is unclear what "its" refers to and in lines 8 and 10 there is no antecedent basis for "inlet side" or "outlet side".

In claim 6 the phrase "wherein the drive cylinders are...connected with a connector ...via...one hydraulic line" is confusing. The examiner believes the phrase should set forth that *each drive cylinder* is connected to an *opening* of the pump via one hydraulic line.

In claim 6 lines 13 and 14 it is unclear what "on their other end" refers to.

In claim 6 line 15 it is unclear what limitation should be between "a for" the examiner believes either a controller or a computer (see line 29) should be referred to.

In claim 6 there is no antecedent basis for: "the reversing process" in line 18, "the conveyor process" in line 19, or for "the actuating element" of line 26.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Benckert (USPN 5,238,371) view of Anderson (USPN 5,332,366) and Benckert et al (USPN 5,520,521).

Benckert discloses a device for controlling a thick matter pump having conveyor cylinders 1, 1', connected to a supply container 2, 2', and a pipe switch 3 which is hydraulically actuated 21. Additionally there are drive cylinders 5, 5' connected by hydraulic circuits 11, 11' to the outlets of a reversible pump 6 having a diagonal disk 15.

The diagonal disk is actuated hydraulically 18. There are hydraulic drive circuits 22, 22' for the pipe switch which are mounted in parallel to the drive cylinder drive circuits and there is a reversing element 22 associated with the pipe switch actuator. Benckert also disclose end of stroke sensors x and pipe switch end of stroke sensors y. Benckert does not disclose a computer controller, the pipe switch having an angle sensor, an outlet pressure sensor or the drive cylinders having two position sensor. Anderson discloses a control and monitoring system for a thick matter pump including a computer 102 which receives as signals hydraulic system pressure signals 110, piston position sensor signals, outlet pressure signals and hydraulic system signals such as representing the position of the pipe switch. See for example the passage on col. 4 lines 40-65. Becker et al disclose a similar system having two end of stroke sensors 44, 46 associated with the drive cylinder. At the time of the invention it would have been obvious to one of ordinary skill in the art to substitute a computer controlled system such as taught by Anderson for the hydraulically controlled system of Becker in order to obtain a control system which also can monitor variables such as the amount of thick matter pumped and the wear on the system (see abstract of Anderson). It also would have been obvious to substitute a two sensor end of stroke arrangement such as taught by Benckert et al for the drive cylinder sensors of Benckert in order to obtain reliable end of stroke sensing in both directions of reciprocation.

With regards to claim 2, while the references do not disclose angle sensors on the pipe switch Anderson clearly teaches monitoring the position of the transfer tube (i.e. the pipe switch, see col. 4 line 62). Angle sensors are well known on controlled

valving arrangements and it would have been obvious to one of ordinary skill in the art to substitute one in the Anderson control arrangement as simple sensing arrangement which accurately determines the position of the pipe switch (see Fig. 1 of Anderson which shows a rotating transfer tube.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dwyer and Benckert ('806) disclose thick matter pump control systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G. Freay whose telephone number is 571-272-4827. The examiner can normally be reached on Monday through Friday 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles G Freay/
Primary Examiner
Art Unit 3746

CGF
January 23, 2009